What is claimed is:

1. A method for decoding a stream of transmitted symbols, comprising:

receiving a signal at a transmission frequency, in which signal the symbols are encoded;

sampling and digitizing the signal to generate a sequence of complex input samples;

processing the samples so as to determine decoded values of successive first and second ones of the symbols;

computing a phase difference between a first one of samples, corresponding to the first symbol, and a second one of the samples, corresponding to the second symbol; and

comparing the phase difference to a difference between the first and second symbols so as to find a frequency offset of the transmission frequency relative to an expected frequency.

2. A method according to claim 1, wherein computing the phase difference comprises taking a complex cross product between the first and second samples.

3. A method according to claim 1, wherein comparing the phase difference comprises determining reference samples that correspond to encoding of the first and second symbols, and taking a complex cross product between the reference samples and the first and second samples.

4. A method according to claim 1, wherein processing the samples comprises computing a correlation between a hypothesis comprising possible values of a group of the symbols, including the first and second symbols, and a portion of the sequence of the samples including the first and second samples.

5. A method according to claim 4, wherein computing the correlation comprises computing a plurality of correlations with respect to different hypotheses, and choosing the one of the hypotheses that has a maximal value of the correlation compared to the other hypotheses.

6. A method according to claim 1, and comprising applying a phase rotation, responsive to the frequency offset, to the complex samples subsequent to the first and second samples in preparation for processing the subsequent samples to determine the decoded values of the symbols to which the subsequent samples correspond.

7. A method according to claim 1, wherein receiving the signal comprises receiving the stream of symbols encoded by frequency shift keying.

8. A receiver for decoding a stream of transmitted symbols, comprising:

input circuitry, coupled to receive a signal at a transmission frequency, in which signal the symbols are encoded, and to sample and digitize the signal to generate a sequence of complex input samples;

a demodulator, which is coupled to process the samples so as to determine decoded values of successive first and second ones of the symbols; and

an automatic frequency control circuit, which is adapted to compute a phase difference between a first one of the samples, corresponding to the first symbol, and a second one of the samples, corresponding to the second symbol, and to compare the phase difference to a difference between the first and second symbols so as to find a frequency offset of the transmission frequency relative to an expected frequency.

9. A receiver according to claim 8, wherein the automatic frequency control circuit comprises a complex multiplier, which is coupled to take a complex cross product between the first and second samples so as to determine the phase difference there between.

10. A receiver according to claim 8, wherein the automatic frequency control circuit is adapted to determine reference samples that correspond to encoding of the first and second symbols, and comprises a complex multiplier, which is coupled to take a complex cross product between the reference samples and the first and second samples so as to find the frequency offset.

11. A receiver according to claim 8, wherein the demodulator is adapted to decode the symbols by computing a correlation between a hypothesis comprising possible values of a group of the symbols, including the first and second symbols, and a portion of the sequence of the samples including the first and second samples.

12. A receiver according to claim 11, wherein the demodulator is adapted to compute a plurality of correlations with respect to different hypotheses, and to choose the one of the hypotheses that has a maximal value of the correlation compared to the other hypotheses.

13. A receiver according to claim 8, and comprising a rotator, which is coupled to apply a phase rotation, responsive to the frequency offset, to the complex samples subsequent to the first and second samples in preparation for processing the subsequent samples to determine the decoded values of the symbols to which the subsequent samples correspond.

14. A receiver according to claim 8, wherein the stream of symbols are encoded by frequency shift keying.